

ABUNDANCE OF ANTS (Hymenoptera : Formicidae) IN UITM KUALA PILAH, NEGERI SEMBILAN

NURSHUADA BINTI YUNUS

**Final Year Project Submitted in
Partial Fulfillment of the Requirement for the
Degree of Bachelor of Science (Hons.) Biology
In The Faculty of Applied Sciences
Universiti Teknologi MARA**

JULY 2018

This Final Year Project Report entitled “**Abundance of Ants (Hymenoptera : Formicidae) in UiTM Kuala Pilah, Negeri Sembilan**” was submitted by NurShuada Binti Yunus, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

Nursyazni Binti Abdul Rahim

Supervisor

Faculty of Applied Sciences

Universiti Teknologi MARA (UiTM)

Negeri Sembilan, Kampus Kuala Pilah,

Pekan Parit Tinggi, 72000 Kuala Pilah

Negeri Sembilan

Ahmad Zaimi Bin Mohd Zawawi

Co-Supervisor

Faculty of Applied Sciences

Universiti Teknologi MARA (UiTM)

Negeri Sembilan, Kampus Kuala Pilah,

Pekan Parit Tinggi, 72000 Kuala Pilah

Negeri Sembilan

Lili Syahani Binti Rusli

Coordinator FSG661 AS201

Faculty of Applied Sciences

Universiti Teknologi MARA (UiTM)

Negeri Sembilan, Kampus Kuala Pilah,

Pekan Parit Tinggi, 72000 Kuala Pilah

Negeri Sembilan

Dr. Aslizah Binti Mohd Aris

Head of Biology School

Faculty of Applied Sciences

Universiti Teknologi MARA (UiTM)

Negeri Sembilan, Kampus Kuala Pilah,

Pekan Parit Tinggi, 72000 Kuala Pilah

Negeri Sembilan

Date:_____

TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
ABSTRAK	x
 CHAPTER 1: INTRODUCTION	
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Significance of Study	3
1.4 Objectives of Study	4
 CHAPTER 2: LITERATURE REVIEW	
2.1 Ant Subfamilies	5
2.1.1 Dolichoderinae	5
2.1.2 Dorylinae	6
2.1.3 Formicinae	7
2.1.4 Ectatomminae	7
2.1.5 Leptanillinae	8
2.1.6 Myrmicinae	9
2.1.7 Proceratiinae	9
2.1.8 Pseudomyrmecinae	10
2.2 Morphology of Ants	11
2.3 Habitat of Ants	12
2.4 Roles of Ants in Ecology	13
2.5 Ants as Social Insects	14
2.6 List of Ants that have Venom in the World	14
2.7 Damage the Venom may cause	15
 CHAPTER 3: METHODOLOGY	
3.1 Materials	17
3.1.1 Raw Materials	17
3.1.2 Chemicals	17
3.1.3 Apparatus	17

3.2	Methods	17
3.2.1	Ant Sampling Method	18
3.2.2	Ant Cleaning and Sorting	18
3.2.3	Subfamily Identification	18
3.2.4	Wet Preservation	19
3.2.5	Dry Preservation	19
3.2.6	Labelling	19
3.3	Data Analysis	20
3.3.1	Shannon-Wiener Diversity Index	20
3.3.2	Shannon-Wiener Evenness Index	20
3.3.3	Margalef's Richness Index	21
 CHAPTER 4: RESULTS AND DISCUSSION		
4.1	Frequency of Formicidae	22
4.1.1	Study Site A	23
4.1.2	Study Site B	24
4.1.3	Study Site c	25
4.2	Diversity of Ants at Three Different Study Sites	27
4.3	Evenness of Ants at Three Different Study Sites	28
4.4	Richness of Ants at Three Different Study Sites	29
 CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS		30
 CITED REFERENCES		32
APPENDICES		36
CURRICULUM VITAE		37

ABSTRACT

ABUNDANCE OF ANTS (Hymenoptera: Formicidae) IN UiTM KUALA PILAH, NEGERI SEMBILAN

Ants are dominant group of insect that can be found anywhere except for polar region. There are few factors that contribute toward habitation of ants at an area such as soil, temperature and resources. Ants have 22 subfamilies and each of them have their own habitat preferences and feeding behavior. This study aims to determine the abundance of ants in UiTM Kuala Pilah. Method used in this study is bait-fall trap. It is recommended compared to manually captured ants because it is accurate. This is because ants have different timing of foraging. By using bait-fall trap, we are able to captured ants with different foraging behavior because the trap is left for 24 hours. From the result, there are three subfamilies exist in UiTM Kuala Pilah. Each area has different resources availability. This contributes to the abundance of ants at an area. Ants choose habitat by considering the amount of disturbance occur in an area. One of the areas has low abundance due to high human interaction in the area. The ants migrate its nesting to other area that offers resources and have less disturbance in order to have high chances of survival.